Space Weather Forecast

Issued on Tuesday, 23 August 2022 at 13:03 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Slight chance R1 Blackouts from a moderately sized sunspot in centre north disc.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar Activity has been Low, with occasional Common flares isc. There are six sunspot regions on the visible disc, three of which are currently unnumbered. The largest and most complex region is currently in the centre disc. This region continues to grow, becoming more elongated although some spots have vanished from the central part. Another region worth of note is developing in the southeast quadrant. This region is still small but growing in size, with proliferation of spots. All the other regions are small and inactive, or about to rotate off the western limb. No Earth-directed CMEs (coronal mass ejections) were observed.

Solar Wind / Geomagnetic Activity: The solar wind slowly declined through the period from 550km/s to 480km/s, as the influence of any recent weak coronal hole or transient enhancement decayed. The magnetic field strength was generally weak, with the north-south component also weak and variable. Geomagnetic activity was Quiet.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) remained at background with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is forecast to be Low, with only a slight chance of increasing to Moderate.

Solar Wind / Geomagnetic Activity: There was a slight chance of a glancing impact from a CME early on day 1 (23rd), however this is looking more and more unlikely. No other Earth-directed CMEs feature in this forecast. Solar winds are expected to slowly decline towards background levels otherwise, with geomagnetic activity remaining largely Quiet. A slight enhancement is possible at the end of day 4 (26th) under the influence of a small coronal hole but its impact on geomagnetic activity should be minor, with perhaps an Unsettled or Active interval.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is forecast to persist at background with no solar radiation storms occurring.

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Met Office Space Weather Forecast

Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	5	1	1	5
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	15	15	15	15
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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